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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,046	11/24/2003	Michel Molinier	2003B114	6645
23455	7590	11/14/2006	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149			SINGH, PREM C	
		ART UNIT	PAPER NUMBER	
			1764	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/721,046	MOLINIER ET AL.	
	Examiner Prem C. Singh	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 September 2006.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 19-30 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

**DETAILED ACTION**

***Response to Amendment***

1. Amendment to the specification and withdrawal of claims 19-30 is noted.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Didillon et al (US Patent 6,255,548) in view of Nakamura et al (US Patent 4,691,070).

6. With respect to claim 1, Didillon invention discloses, "A process for selective hydrogenation of unsaturated compounds such as acetylenic compounds or diolefins in the presence of a catalyst comprising at least one support, at least one metal from group VIII of the periodic table and at least one additional element M selected from the group formed by germanium, tin, lead, rhenium, gallium, indium, gold, silver, and thalium." (Abstract). "The impregnated support is then filtered, optionally washed with distilled water, then dried and calcined in air." (Column 2, lines 57-59).

Didillon invention does not disclose contacting the support with at least one organic nitrogen-containing compound.

Nakamura invention discloses in Example 1, "The dry composite was reduced with an aqueous solution containing 10% by weight of hydrazine." (Column 3, lines 63-65).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify Didillon invention and use hydrazine for reducing the prepared catalyst as disclosed in Nakamura invention.

7. With respect to claims 2-4, and 10-11, Nakamura invention discloses, "The aforementioned support was impregnated. The dry composite was reduced with hydrazine." (Column 3, lines 60-66).

Nakamura invention does not specifically mention that contacting with nitrogen-containing compound is effected during or before impregnation of the support.

Didillon invention discloses, "The invention is not limited to any specific impregnation procedure. When several solutions are used, intermediate drying and/or calcining steps can be carried out." (Column 2, lines 24-28).

Thus, it would have been obvious to one skilled in the art to combine Didillon and Nakamura inventions as mentioned under claim 1, and effect contacting with hydrazine during, before, or after impregnation of the support because this will not affect the catalyst properties.

8. With respect to claims 5, 8, and 9, Didillon invention discloses, "The catalyst of the invention includes: a) nickel, palladium, platinum, rhodium, ruthenium, and indium." (Column 2, lines 6-7).

Art Unit: 1764

9. With respect to claims 6 and 7, Didillon invention discloses, "b) at least one additional element M selected from germanium, tin, lead, rhenium, gallium, indium, silver, gold, and thalium." (Column 2, lines 12-14).

10. With respect to claim 12, Didillon invention discloses, "The support of the catalyst of the invention comprises at least one refractory oxide which is generally selected from oxides of magnesium, aluminum, silicon, titanium, zirconium, or thorium used alone or mixed together or mixed with oxides of other elements from the periodic table." (Column 1, lines 61-67).

11. With respect to claims 13-15, Nakamura invention mentions using hydrazine as nitrogen-containing compound, but does not specifically mention using amino acid, amino alcohol and 2-amino-2-methyl-1-propanol.

It would have been obvious to one skilled in the art to modify Nakamura invention and substitute hydrazine with one of the claimed compounds because they are functionally similar.

12. With respect to claim 16, Didillon invention discloses, " The impregnated support is calcined in air normally between 110°C and about 500°C." (Column 2, lines 57-60).

13. With respect to claim 17, Didillon invention discloses, "Typical feeds which can be treated are C<sub>2</sub>, C<sub>3</sub>, or C<sub>4</sub> steam cracking cuts, C<sub>3</sub>, C<sub>4</sub>, or C<sub>5</sub> cuts." (Column 3, lines 52-54).

Although Didillon does not specifically mention C<sub>2</sub> to C<sub>4</sub> olefins, it is known to those skilled in the art that C<sub>2</sub>-C<sub>4</sub> cracking cuts comprise olefins.

14. With respect to claim 18, Didillon invention discloses, "The feed is generally brought into contact with the catalyst of the present invention at a temperature in the range of 20 to 200°C and the pressure from atmospheric to 6 MPa." (Column 3, lines 54-59).

Didillon invention does not specifically mention about hydrogen to diolefin ratio.

Nakamura discloses, "Generally, the mole ratio of the diolefin to the molecular hydrogen falls in the range of 1/0.8 to 1.5." (Column 3, lines 17-19).

It would have been obvious to combine Didillon and Nakamura inventions and modify Didillon invention by using a mole ratio of hydrogen to diolefin as disclosed by Nakamura. This will help determine the hydrogen requirement in the process of hydrogenation.

### ***Response to Arguments***

15. The Applicant argues that hydrazine does not meet the claim requirement of "contacting said support with at least one organic nitrogen-containing compound."

The Applicant's argument is not persuasive because hydrazine derivatives: 1,1-dimethylhydrazine and 1,2-dimethylhydrazine, in which two of the hydrogen atoms are substituted with methyl groups, are also described as hydrazines (see attached Wikipedia® printout).

### ***Conclusion***

**16. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**17.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prem C. Singh whose telephone number is 571-272-6381. The examiner can normally be reached on MF 6:30 AM-3:00 PM.

Art Unit: 1764

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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